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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.       | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------------|------------------|
| 10/627,229  | 07/25/2003  | Robert C. McDonald   | 81980A                    | 2445             |
| 23685 7590 03/21/2007<br>KRIEGSMAN & KRIEGSMAN<br>30 TURNPIKE ROAD, SUITE 9<br>SOUTHBOROUGH, MA 01772 |             |                      | EXAMINER<br>BELL, BRUCE F |                  |
|   |             |                      | ART UNIT<br>1746          | PAPER NUMBER     |
| SHORTENED STATUTORY PERIOD OF RESPONSE  |             |                      | MAIL DATE                 | DELIVERY MODE    |
| 3 MONTHS  |             |                      | 03/21/2007                | PAPER            |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/627,229

Applicant(s)

MCDONALD ET AL.

Examiner

Bruce F. Bell

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1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 44-58 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 53,54,56 and 57 is/are allowed.
- 6) ☒ Claim(s) 44-52,55 and 58 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 44-52, 55 are rejected under 35 U.S.C. 102(b) as being anticipated by Seko (4178218).

Seko discloses a fluorocarbon polymer membrane with pendant sulfonic groups that is coated or impregnated with a monomer such as acrylic acid and is polymerized in the presence of divinylbenzene to form a cation exchange membrane with improved dimensional stability. The patent further sets forth that standard polymerization procedures are followed. The patent further sets forth that a crosslinking agent may be used in the coating prior to polymerization, and that the polymerization may be in the presence of a free radical polymerization catalyst such as a peroxide or by the action of high energy ionizing radiation or by other means. See col. 5, lines 17-53 and the examples.

The prior art of Seko anticipates the applicants instant invention as set forth in the instant claims as shown by way of the disclosure to Seko above. The recitations in the dependent claims with respect to the one or more desired areas and the periphery and one or more interior regions is inherently met by way of the entire membrane being coated with the monomer solution which is polymerized, since comprising language has

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been used. There is not seen to be anything in the instant claims that excludes the entire area from being coated as the desired area, and therefore both the periphery and the interior areas being coated are encompassed by that of the entire membrane being coated. Therefore, the prior art of Seko anticipates the applicants instant invention as set forth above.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 44-52, 55 and 58 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohno et al (6025457).

Ohno et al discloses a Nafion membrane that is impregnated with an imidazolium salt derivative. See col. 6, lines 13-20. The examples show that the polymerization can occur by heating, by a radical polymerization initiator such as benzoyl peroxide or by UV irradiation. See also col. 3, line 55 through col. 4, line 7.

Ohno et al anticipate the applicants instant invention as shown by way of the disclosure above with respect to the instant claims. The recitations in the dependent claims with respect to the one or more desired areas and the periphery and one or more interior regions is inherently met by way of the entire membrane being coated or impregnated with the monomer solution which is polymerized, since comprising language has been used. There is not seen to be anything in the instant claims that excludes the entire area from being coated as the desired area, and therefore both the

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periphery and the interior areas being coated are encompassed by that of the entire membrane being coated or impregnated. Therefore, the prior art of Ohno et al anticipates the applicants instant invention as set forth above.

***Allowable Subject Matter***

5. Claims 53, 54, 56 57 are allowable over the prior art of record.
6. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or suggest the quaternary salt monomer structure set forth in the independent claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296.


The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BFB  
March 14, 2007

  
Bruce F. Bell  
Primary Examiner  
Art Unit 1746